

the

Ampeer

February		The EFO Officers	2008
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Ampeer subscriptions are \$15 a year US & Canada and \$20 a year worldwide	<p>The Next Meeting:</p> <p><b>Date:</b> Thursday, February 7 <b>Time:</b> 7:30 p.m.</p> <p><b>Place:</b> Bill Brown's house, Northville, MI (see info inside)</p>		

**What's In This Issue:**  
 January EFO Meeting Report – Upcoming Feb. EFO Meeting Info – A Good Read – Keeping Li-Pos Warm at the Field in Winter - Weights of Various Covering Materials – Gary Gullikson's Berkeley Aeronca Sedan – Nice Australian Spitfire – One Way to Draw Plans Using CAD – Upcoming E-vents

**January EFO Meeting**

The meeting was held on January 10 at Jim Young's house in Brighton, MI. Unfortunately, I was unable to attend, as I was in Grand Rapids at my son's. His wife gave birth to our first granddaughter on Tuesday, January 8. Wish I could have been there, but was happy to be spending time with the new granddaughter.

Here's Jim's report –

Hi Ken,

I hope everything is going fine with your new granddaughter.

We had a pretty good time Thursday night here. **Rick Sawicki** brought a couple of flat foamies that he and his son built for winter flying.

**Roger Wilfong** brought a new Acrosport/Cutie that he built from a partially completed fuselage he got at the Midwest Swap Meet and a wing kit his wife got him a few years ago.

I showed my new Art Chester Goon in the bones, built from Martine Irvine plans. I needed something to keep Keith's Fokerts busy.

**Bill Brown** brought the fuselage from a new Electrify Catalina kit. Nice glass work.

My son, **Tim**, showed off his Christmas present (dad's latest review project) a Hobbico NexStar select EP trainer. This complete package came with a 6-channel radio and brushless motor. Tim has flown it a few times and it is very stable thanks to the optical horizon leveler system.

Unfortunately, we were having so much fun I forgot to snap a few photos for you. I'll see if I can get Tim to pose with our planes and send them to you.

After that we watched the 2007 Neat Fair on our big screen and milled around my shop. We had a good discussion on the 2.4GHz Spektrum system. A few of the guys had gone to the SkyMaster's meeting and they were impressed with the level of testing and thought put into this system. We also flew some of the new Airhog laser tag helis. The meeting broke up around 10:00 p.m.

Jim

Thanks Jim! See you all in February.



Rick Sawicki with his E-Flite Extra 260 and Sobre  
Photo taken at the January Midwest RC Society meeting.

### Upcoming February EFO Meeting

The Thursday, February 7 EFO meeting will be held at **Bill Brown's house**.

#### Address

Country Club Village Condominiums  
39603 Village Run Drive  
Northville, MI.  
Phone: 734 420-2733

#### Directions:

1. Proceeding South on US 275 and exit at 6 Mile Rd.
2. Go West on 6 MILE Rd to the first intersection with a traffic light, which is Haggerty Rd.
3. Turn left (South) onto Haggerty Rd and proceed ~ 1/2 mile to the next traffic light.
4. Turn right (West) into Country Club Village Condominiums.
5. Keep Bearing Right on Village Run Drive and go 0.6 Mile then look to your left for the 1st house past the "Y" intersection. Look for the open garage door with a model airplane on the trunk of a car.
6. Please enter through the side door inside the garage. The meeting will be in the basement shop.
7. The road ends at the next intersection. If you go too far, turn around ;-)

Regards,  
Bill

P.S. Let me order the weather for this one!

### And more from Rick Sawicki:



The larger red plane with flames is the Addiction from Australia. It is very light at 24 oz. with 500 sq.in. of wing area. It utilizes 64 separate pieces of carbon fiber to add strength while keeping it light. It takes a 3-cell 2100mAh Li-Po battery or even a 1000 mAh. The motor is also from Australia. I have tested the motor and the thrust is well over twice model weight.

The other two are the latest flat foams from E-flight. They use a lot of carbon fiber rods for body bracing and wing and tail strength. One will be a Christmas present fro my son, whichever one he chooses, I'll take the other one. I hope to use them in the 23 Mile Dome in the future.

### A Good Read

Bob Aberle put me on to this article. It is by Greg Covey and is on the Web at RC Universe. The article is titled, "What Motor Do I Use?" and includes the following sections;

Choosing An Electric Power System  
Marketing Techniques  
Brushed vs. Brushless  
Inrunner vs. Outrunner  
Understanding an Outrunner's Numbers  
Glow Conversion Example: Graupner Taxi Cup II  
And a Summary

You'll find it a good and informative read.  
[http://www.rcuniverse.com/magazine/article\\_display.cfm?article\\_id=956](http://www.rcuniverse.com/magazine/article_display.cfm?article_id=956)

## EFLIOWA 07 Report

From Orville Shields osrs73@yahoo.com

Ken,

This is the 10th year of a little gathering of e-fliers that Jon McVay started. Jon and Tom McDonnell could not make it this year but we expect them next year.

I have never seen a better weekend for a fly-in. The temperature was about 75. There were times when the wind was in the 5 to 8 mph and then there were also times when it was calm. I am no expert on thermals but the puffy clouds, variable winds and my buddy's canopy trying to lift off tells me it was a great weekend for sailplanes also.

This year we had a demo hour at noon each day. Everyone here was very impressed with the guys that flew during that hour. We were honored with a visit from the electric power guru Keith Shaw of Ann Arbor, Michigan. Have you met Keith? :) (*I believe I have. ;-)*) Anyone that reads about electric power knows of Keith's accomplishments over the last 30 or so years. He flew 5 of his airplanes that are all works of art. Even the 25-year-old Spitfire looks and flies like new. I guess that is one of the benefits of vibration free power and smooth flying.



Keith's Stomo goes vertical



Jim Porter

We also enjoyed a couple local area modelers during the demo. Jim Porter has always been a fierce competitor with sailplanes and electric power. He showed us a couple of his competition models to highlight the differences in the models we enjoy. His demos could be titled "Gone in 20 seconds". Thank goodness he only uses about 10 seconds of power at a time. One of his planes uses somewhere near 150 amps at full throttle. It was also nice that he didn't try for duration or we would not be done yet.



Darryl with Plenny walking behind him



Darryl Miller also flew in our demo with his fantastic DC-3 in American Airlines colors. He made a very nice CD to play along with his flight and explain the incredible features and versatility of that famous airplane. The CD playing the 1940's music along with his smooth flying made for a ballet like performance.

Darryl is an American Airline pilot but is a little too young to have flown the full size DC-3 so he had to make his own.

There were a few vendors involved in the activities of the weekend. Sig Manufacturing's Bob Nelson flew a very nice electric conversion of their new Waco SRE ARF as well as their Dornier DO217.

Doug Outlaw and Chris Sydor (spelling) of Hobbico flew several of their nice electrics and gave out many nice Futaba and Electrify T-Shirts. Stan Zolodz of Z-Planes was there flying and selling all kinds of electric equipment. Bill of MidAmerica Hobbies, North Liberty, IA was also there with his great selection of electric goodies.

We had a prize raffle that included donations from Sig, Dynamo Electrics, Z-Planes, and Castle Creations.

Good times,  
Orville

### Keeping Li-Pos Warm at the Field in Winter



When I was talking with Keith Shaw recently, he said that he had purchased a Rubbermaid 5-Liter cooler. The unit not only cools, but heats as well. Keith's unit is listed on the source Web site as VEC222RB, 5-liter size. Meijer's had it normally at \$31.99; his scratch-and-dent special was \$22.

Internet buyers beware! Don't assume that it is always cheaper. This is a good example as Lane's has it on sale for "only" \$54 + \$8 shipping.

It plugs into a 12v battery, either through the accessory plug in a vehicle or directly to a 12v battery.

Keith's tests have confirmed that it does indeed warm to about 120F, although it does take a bit of a warm up period to get there. He warns that although the inside bottom of the container is white, and at first glance looks like the rest of the container, it is aluminum and therefore there should be a means of keeping bare battery leads from touching the bottom.

While rice bags work to get the batteries to the field in a warm state, they can't keep heating them like this product. Also, rice bags create a lot of moisture when enclosed and have a certain aroma about them after a while.

Another advantage to this product is that the little, fantastic FMA Cellpro charger will fit inside, so it that it can be used without going into "cold" charge mode.

I could not find a page on the RubberMaid site that showed what is available, but this page shows several different models.

<http://www.lanescarproducts.com/rubbermaid-car-cooler--warmer.html>

### Weights of Various Covering Materials

*(Over the years I have published covering weights several times in the Ampeer. Here's the latest I've found. KM)*

From Ron AKA Sky Sharkster at

<http://www.wattflyer.com/forums/showthread.php?t=10443>

On an earlier thread I posted some links for covering weights, they were compiled by independent testers (listed below) using a variety of measuring standards like Oz/sq/yard, Gr/Sq/Meter, etc, making it hard to compare them accurately. Well, I sent'em all through the online converter and changed them all to "Grams per Square Foot". Why? Because it's easy. Most kits and plans (in the U.S.) supply wing area in square inches and we all know that 1 square foot= 144 square inches, right?

Anyway, here they are, lightest to heaviest from the top. Some of the sites differed by a small amount so I converted those to a "Range" and for a couple of samples there already was a "range" of weights, since some of the colors are heavier than others. For further descriptions see the links on the earlier post.

<http://www.wattflyer.com/forums/showthread.php?t=10278>

Weights in Grams per square foot.

Produce Bags (Thin Plastic, From Target) 0.53 (See Post # 18, 24)  
 Japanese Tissue 0.650  
 Risteen Microlite (Corsair Blue) 0.81 (See Post # 20)  
 Risteen Microlite 0.90-0.95 (see post # 15 + 20)  
 Esaki Light Silk (Clear) 0.97  
 Risteen Microlite (Light Yellow) 1.1 (See Post # 20)  
 Saran Wrap (11" x 12") 1.29 (See Post # 18)  
 Ripstop Polyester 1.575 (see post # 15)  
 Coverite MicroLite (Transparent) 1.889  
 Nelson LiteFilm 1.950  
 SoLite 1.950  
 Airspan 2.119 (Mfg listed weights 2.229-2.601)  
 MicaFilm (Transparent) 2.332  
 LiteSpan 2.674-2.787  
 Light Colored Japanese Tissue, 2.749 (3 Thin coats Nitrate Dope)  
 Coverlite 2.803 (See Post # 10)  
 Colored Micafilm 3.247-3.716  
 Ultracote (Transparent Lite) 3.4  
 Light White Silk, 3.572 (5 Coats Thin Nitrate Dope)  
 Fibafilm 3.874-3.901  
 Micafilm (Red & Yellow) 4.0  
 Sig Coverall (White) 4.3  
 Polycover (Transparent) 4.355  
 Sig Supercote (Silver) 4.8  
 Ultracote (Transparent) 5.0  
 Colored Skysail, 5.087 (4 coats 50/50 Butyrate Dope)  
 Solarfilm 5.109-5.574 (Mfg Listed weights 4.645-6.038)  
 Black Silkspan, 5.216 (5 Coats Thin Nitrate Dope)  
 MonoKote (Colored Transparent) 5.307-5.5  
 Solarspan 5.574-6.503  
 Econokote 5.670 (See Post # 5)  
 TowerKote 5.670 (See Post # 16)  
 Aerofilm 5.574-5.669  
 MonoKote (Red) 5.8  
 SIG AeroKote Lite 5.8-6.0 (See Post # 27)  
 Monokote (Metallic Platinum) 6.0  
 MonoKote (Black) 6.0  
 Ultracote 6.503  
 Solarfilm Matt Polyester 6.503-7.432 (See Post # 12)  
 Polycover (Opaque) 6.533 (See Post # 7)  
 Ultracote (Cub Yellow) 6.6  
 White Japanese Tissue, 6.879 (4 Coats 50/50 Butyrate Dope)

Colored Nylon, 6.898 (6 Coats 50/50 Butyrate Dope)  
 SolarKote 6.967  
 Coverite Black Baron Opaque 7.087 (Mfg. Listed Weight)  
 Coverite 21st Century Film 7.276-10.4  
 Mokokote (White) 7.3  
 MonoKote (Yellow) 7.5  
 White Super Coverite 7.559  
 SIG AeroKote 7.9 (See Post # 27)  
 Ultracote (Pearl Yellow) 8.2  
 SolarTex 8.361 (Mfg Listed weight) 7.896-8.825  
 Coverite Colored Super 8.504  
 Superfabric 8.552-11.024 (See Post # 25)  
 Coverite 21st Century Fabric 9.638 (Mfg Listed Weight)  
 MokoKote (Florescent Orange) 9.4  
 GlossTex 10.683-11.612 (Mfg Listed weight) 10.683-12.077  
 WorldTex (White) 13.3  
 Thanks again to Paul Daniels, Fatlion (Fritz Bien + Herm Perez), Barry's Aircraft Page, Warden, Twmaster, JoJa15, David Lewis and Modelflight.com!  
<http://www.pldaniels.com/flying/bals...materials.html>  
<http://www.fatlion.com/sailplanes/weights.html>  
<http://www.modelflight.com/weight.html>  
<http://www.bmaps.net/solafilm.html>  
 Ron

**Gary Gullikson's Berkeley Aeronca Sedan**  
 From Gary Gullikson [ggullikson@socal.rr.com](mailto:ggullikson@socal.rr.com)



This one is my entry in the ongoing E-Zone Scale Electric Forum "Plan and Kit Build Fun Contest". I got the 1949 vintage Berkeley plans from Aerodyne Online. A modeler from Portland, OR furnished nice clear and complete Kinko color scans of part sheets from his old kit. I had Callie of Callie Graphics,

Albuquerque, NM, make up the fuselage side and tail graphics and wing numbers.

Power is an Esskay 400XT on 2 cell 800mAh Li-Po using a cut down GWS 9x5 direct drive prop with a Castle Creations Thunder Bird 18 ESC and Park BEC. Guidance is a Spektrum AR6000 with two GWS Pico servos for ailerons and two HS-55's for elevator and rudder with steerable tail wheel in scale position.



The Model maiden two days ago, will need some minor tweaking, but flew well. This model was one of my favorites from the late 50's as a free flight powered by Pee Wee .020, so I had to build an e-powered R/C version. Remember my Peashooter?

Gary Gullikson  
Garden Grove, CA

*I sure do remember that beautiful Peashooter. Thanks for this flying shot! KM*



### Nice Australian Spitfire

From Stuart Smith [stuartsmith@netspace.net.au](mailto:stuartsmith@netspace.net.au)

Stuart and I exchanged some info about storing Li-Po batteries. He also had these photos attached with the following information:

“Spitfire is scratch-built, I much prefer to do this as half the enjoyment is in the building. I have a 48 inch ME109 on the building board at the moment.

The Spitfire was developed from a 27 inch free plan from a magazine.”



### One Way to Draw Plans Using CAD

By Ken Myers

As I am writing up this issue of the *Ampeer* I am finishing up my plans for a design I call Son of Swallow. As noted last month, it is based on a 1986 Fred Reese design, but it is not his Swallow. I have made many, many changes, which I will note in an upcoming issue, but one of the major changes was the size, as well as structure, airfoil, incidence angles and more. It was suggested that I might share how I got the original plans into my computer for use with a CAD program, so this is a short step-by-step of how I did it.

This process is best used with reduced size plans, if you have a normal size scanner and don't like “stitching” things together in your imaging program.

To avoid any copyright problems, I am going to use a scale outline 3-view, instead of a copyrighted plan, but the process is the same.

Get the plan or outline into your computer. You could scan it or find it on the Internet (that's where I got the Swallow plan).

I cannot tell you how to use your imagining program or CAD program. If you have a basic



knowledge of those two programs, you will be able to follow my directions.

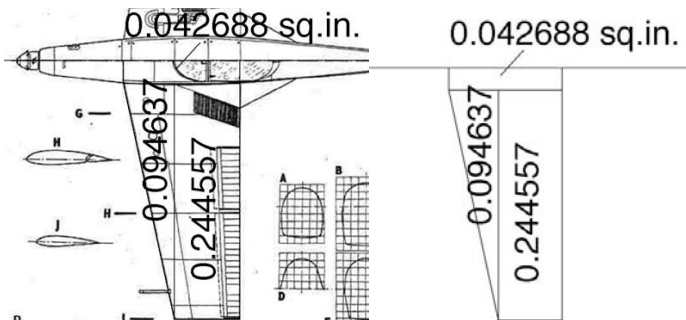
For reference, my imaging program is Photoshop Elements and my CAD program is CADintosh.

**Step 1:** Either scan the 3-view/plan into the computer and save it to a format that your CAD program can import or get a 3-view/plan from the Internet. An Internet 3-view/plan will most likely be in .jpg or .gif format and have to be changed by the imaging program into a format your CAD program can use.

**Step 2:** Open your CAD program and import the 3-view/plan.

When I originally opened my 3-view in the CAD program, I found that the fuselage top view datum line was off by about 2 degrees. I opened the 3-view in the imaging program and rotated it to the proper angle. This took several tries to get it "just right."

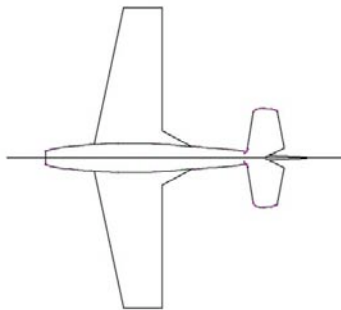
Use the tools in the CAD program to compute the wing area of the "original drawing".



Original shown on left and hidden on right

You should note that I did not use the "triangle" at the rear of the wing, going to the fuselage, in computing the wing area for this example.

**Step 3:** Draw in all of the outlines only of the 3-view/plan. Do not draw any structure at this time.

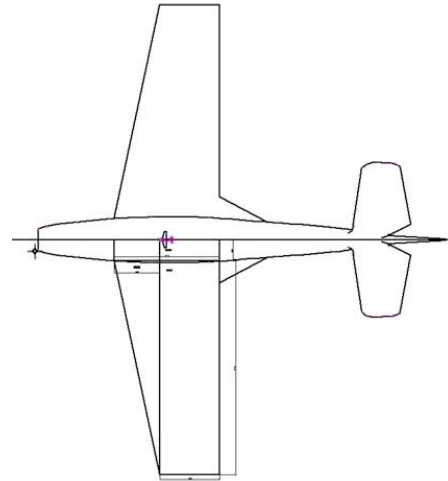


Save the file with a name like outline-zlin526. For this example, I only quickly did the top view, but all outlines should be in the outline file.

**Step 4:** Once the original outline has been saved with its own file name, so that it can be used over to create

different size models, do a save as and rename the file to something like zlin526-650, where the 650 represents the desired wing area in sq. in.

To find the multiplier for the drawing, find the square root of the desired area 650, which is about 25.5. Next find the square root of the "original" area 0.763764, which is 0.8739359. Divide 25.5 by 0.8739359, which yields 29.172731 or 29.2 as the multiplier. Enlarge the entire outline drawing by a factor of 29.2.

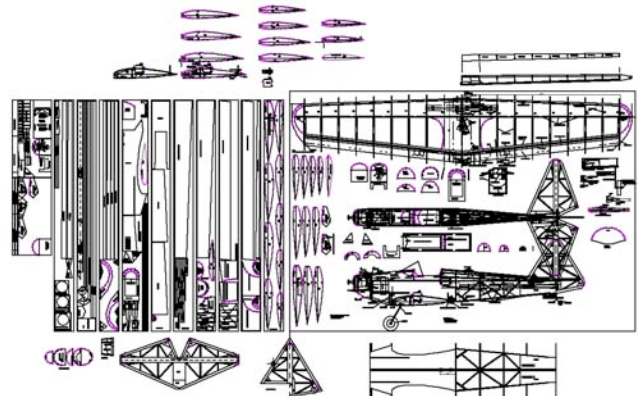


This screen capture shows the "original drawing" near the center and the outline enlarged by 29.2. It also shows that I checked and found the area to be about 652 sq.in., which is what I wanted.

**Step 5:** Add the structure. This is a LONG and TEDIOUS process! Be sure that you have read Keith Shaw's Talk to the EMFSSO to learn how to do model structure correctly. You'll find that four part document here;

<http://members.aol.com/kmyersefo/page3.htm#TOP>

**Step 6:** After hours and hours of drawing and thinking and thinking and drawing, print your plans and build the plane.



After weeks and weeks of work, you may have a finished plan and templates similar to this one for Son of Swallow.

### Ampeer Paper Subscriber Reminder

When subscribing to or renewing the paper version of the *Ampeer*, please make the check payable to Ken Myers. We do not have a DBA for the *Ampeer* or EFO. Thanks, Ken

#### Upcoming E-events:

**Thursday, February 7, 2008** EFO Meeting, 7:30 p.m.,  
Bill Brown's house, Northville, MI (see info in this issue)

**February 9 & 10, 2008** E-Fest Indoor Electric Festival,  
Champaign, Illinois, admission and registration details,  
schedules, lodging, maps and more -- visit the festival web  
site at [www.gpe-fest.com](http://www.gpe-fest.com).

**April 4th, 5th, & 6th, 2008** "THE TOLEDO SHOW",  
SeaGate Centre, 401 Jefferson Avenue Toledo, Ohio 43604  
Show hours: Fri/Sat 9am to 5pm - Sun 9am to 3pm  
Handicap parking available - Tickets readily available at  
the door!  
Admission is only \$8.00 per person per day, and as always

kids 12 and under are FREE!



If you follow the CAD designing steps in this issue, you could end up with a Zlin Z-526. ;-)



The Ampeer/Ken Myers

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<http://members.aol.com/kmyersefo>

#### The Next Flying Meeting:

**Date:** Thursday, February 7 **Time:** 7:30 p.m.

**Place:** Bill Brown's house

See info in this issue

**Please NOTE the PLACE!**